

The preceding describes our invention. What we claim is:

1. A two-piece diode wheel for use in the brushless exciter, said diode wheel having a peripheral drum for carrying a plurality of diodes and a hub having an axis of rotation, said hub having a plurality of radially extending spokes contacting the interior of the drum and supporting the drum in a substantially fixed position relative to the hub, wherein the improvement comprises an outer end of at least a first of the spokes having an outer surface, said outer surface having an area substantially greater than the minimum cross sectional area of the spoke.

2. The improved diode wheel of claim 1, wherein said drum has a circularly cylindrical interior surface having a predetermined radius, and wherein each spoke's outer surface has a radius of curvature relative to the hub's axis of rotation collectively defining a cylinder forming at room temperature an interference fit with the drum's interior surface radius.

3. The improved diode wheel of claim 2, wherein the at least first spoke has at its outer end a pad, said pad overhanging the first spoke at least angularly.

4. The improved diode wheel of claim 3, wherein the pad overhangs the spoke angularly both leading and following.

5. The improved diode wheel of claim 4, wherein the pad overhangs the spoke axially.
6. The improved diode wheel of claim 4, wherein the pad overhangs the spoke in both axial directions.
7. The improved diode wheel of claim 4, wherein the pad overhangs the spoke angularly and symmetrically.
8. The improved diode wheel of claim 4, wherein the pad has at least one axially facing surface intersecting the pad's outer surface and defining thereby a curved line of intersection, said axially facing surface having a groove having a predetermined spacing from the line of intersection.
9. The improved diode wheel of claim 8, wherein said groove has a substantially constant spacing from the curved line of intersection.
10. The improved diode wheel of claim 3, wherein the pad has a profile in an axial elevation view blending with the spoke in a transition area of the pad from the pad surface to the spoke.

11. The improved diode wheel of claim 3, wherein at least three spokes equally spaced have a bore extending radially from the pad's outer surface toward the hub to a predetermined depth, and the drum has a radially extending hole penetrating the drum and aligned with the spoke's bore, said drum having on its outer surface a circular groove surrounding the drum's hole, said circular groove having an inner radius larger than the radius of the drum's hole, said drum's hole and said spoke's bore for receiving a pin.

12. The improved diode wheel of claim 2, wherein the pad overhangs the spoke axially.

13. The improved diode wheel of claim 12, wherein the pad overhangs the spoke in both axial directions.

14. A two-piece diode wheel for use in the exciter for a generator armature winding, said diode wheel having a peripheral drum for carrying a plurality of diodes and a hub having an axis of rotation, said hub having a plurality of radially extending spokes contacting the interior of the drum and supporting the drum in a substantially fixed position relative to the hub, said drum having a circularly cylindrical interior surface having a predetermined radius at room temperature, wherein the improvement comprises at the outer end of at least a first of the spokes, a pad integral with the outer end of the spoke and having an outer surface with an area substantially larger than the minimum cross sectional area of the spoke.

15. The improved diode wheel of claim 14, said pad's outer surface having a radius of curvature relative to the hub's axis of rotation forming an interference fit with the drum's interior surface radius.

16. The improved diode wheel spoke of claim 15, wherein the pad overhangs the first spoke angularly both leading and following.

17. The improved diode wheel spoke of claim 15, wherein the pad overhangs the first spoke angularly.

19. The improved diode wheel spoke of claim 15, wherein the pad overhangs the first spoke angularly and symmetrically both leading and following.

20. The improved diode wheel spoke of claim 15, wherein the pad overhangs the first spoke axially.

21. The improved diode wheel spoke of claim 15, wherein the pad overhangs the first spoke in both axial directions.

22. The improved diode wheel of claim 15, wherein the first spoke has a radially aligned hole, the drum has a hole aligned with the first spoke's hole, and the outer surface of the drum has a circular groove surrounding and concentric with the drum's hole.

Approved for Release